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Date: 10/25/2007 2:20 PM
Subject: Ground Water Seepage in Rilda Canyon

Tom Lloyd

Incoming
C/015/0018

Recently you inquired whether the seeps located along the Emery County road in Rilda Canyon were related to the Deer Creek Mine workings located in North Rilda Ridge. To give you a history of mining in this area, Energy West completed mining in the North Rilda Ridge Area (Hiawatha seam [8th Right longwall panel]) in August 2004. Seals isolating this area were installed in February 2005.

As standard practice in the Deer Creek Mine, intercepted groundwater is diverted to sealed areas in the mine and only the excess is discharged at the Deer Creek UPDES discharge point located in Deer Creek Canyon. As mining progressed in the Mill Fork area, intercepted groundwater was diverted to the abandoned area of North Rilda Ridge behind the 6th North seals.

As stated in the Deer Creek mine permit (Volume 11 North Rilda: Hydrologic Section - Probable Hydrologic Consequences (PHC) Determination), PacifiCorp recognized the fact that the mine workings were in close proximity to the coal outcrop. With the development of Rilda Canyon portal facilities, PacifiCorp received approval to divert surface runoff and gray water from these facilities through a horizontal directional drill hole to the abandoned mine workings of North Rilda Ridge. Due to the downsizing of the facilities, diversion of the surface runoff and gray water into the sealed area will not be realized. Even though Energy West did not institute the diversion of surface facility water into the mine workings, the coal outcrop area was routinely monitored for potential discharge of intercepted groundwater (refer to highlighted area in Rilda Canyon).

During the winter of 2006-07, Energy West witnessed several seeps below the coal outcrop (from fractures of the upper member of the Star Point Sandstone and Mancos Shale) which historically there have been damp areas or minor seeps. Energy West collected a sample of the water from the seep area on January 24, 2007. Flow from the seep area was estimated at 2 gpm. Water quality analysis indicated that the source of the water was more likely the Mancos Shale / Star Point Sandstone intertongue zone (reported TDS value of the January 24 sample was 1,525 mg/l) rather than groundwater intercepted in the mine (which has a much lower TDS component on average). As a precautionary measure, Energy West immediately terminated discharging water into the sealed area and diverted the water to the Deer Creek portal area. During the summer/fall of 2007, the original seeps documented in January 2007 have persisted along with the formation of several other seeps. Energy West

has instituted a monitoring program to determine quality and quantity of seeps along the Star Point Sandstone/Mancos Shale interface below the coal outcrop area. An additional sample of the seepage was collected on October 19, 2007. Energy West will provide you a copy of the water sampling results when they become available. At this time, it is difficult to determine if the seepage is a direct result of the storage of the intercepted groundwater due to the unusually high TDS of the seep water. Typically, intercepted groundwater monitored at the Deer Creek portals averages approximately 450 mg/l of total dissolved solids which is considerably lower than the seepage which is occurring in Rilda Canyon.

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